

# San Gabriel River Metals TMDL Workshop

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Jenny Newman  
Los Angeles Regional Water Quality Control Board  
March 22, 2006

# Purpose of Meeting



- Present the proposed TMDL
- Answer stakeholder questions
- Receive stakeholder feedback

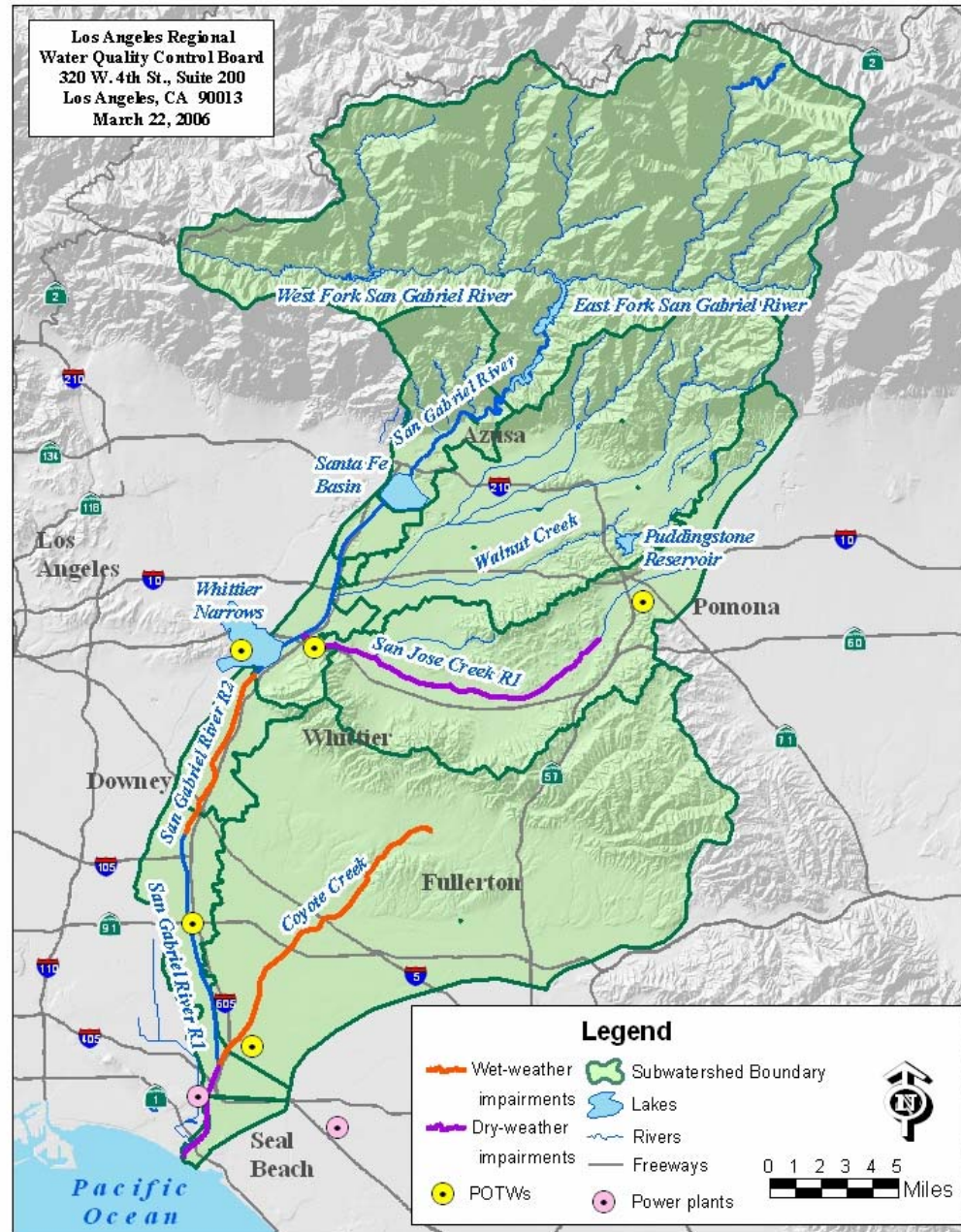
# Introduction



- Consent Decree requires San Gabriel Metals TMDL by March 2007
- Similar approach to the LA River Metals TMDL
  - Effective date: January 11, 2006
- Differences from LA River Metals TMDL:
  - Different reaches impaired in dry and wet weather
  - Estuary impairment for copper in water column

# San Gabriel River Watershed

Los Angeles Regional  
Water Quality Control Board  
320 W. 4th St., Suite 200  
Los Angeles, CA 90013  
March 22, 2006



# Problem Identification

303(d) listed water bodies:

Impaired Reach	Copper	Lead	Zinc	Selenium
San Gabriel River Reach 2	X	X	X	
Coyote Creek	X	X	X	X

# Problem Identification

Required TMDLs based on additional data review:

Dry-weather TMDLs	Copper	Lead	Zinc	Selenium
San Jose Creek Reach 1				X
Estuary	X			
Wet-weather TMDLs	Copper	Lead	Zinc	Selenium
San Gabriel River Reach 2		X		
Coyote Creek	X	X	X	

# Numeric Targets

## ■ Dry Weather

- CTR Chronic Criteria
- Saltwater Cu criterion for Estuary
- Freshwater Se criterion for San Jose Creek Reach 1
- Hardness-independent criteria
- CTR default translators

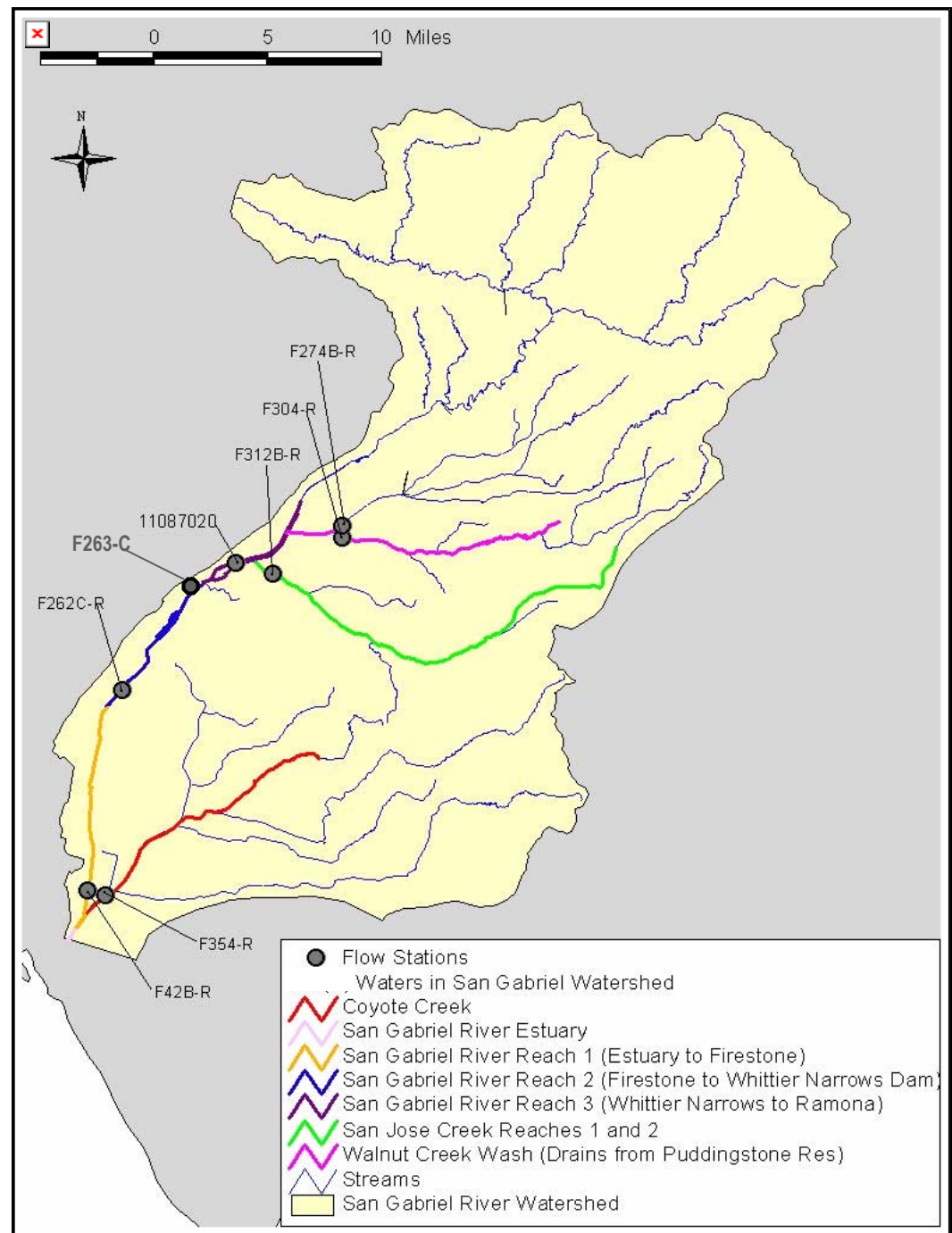
## ■ Wet Weather

- CTR Acute Criteria
- Reach specific hardness (50th percentile)
- CTR default translators

# Flow Gauges in San Gabriel River Watershed

■ Reach 2: Delineation between dry and wet weather = 260 cfs (90th percentile flow at Station No. 1087020)

■ Coyote: Delineation between dry and wet weather = 156 cfs (90th percentile flow at Station No. F354-R)





# Dry-weather Targets

Reach	Copper			Selenium		
	Chronic Saltwater Criteria (µg/L dissolved)	CCF	Numeric Target (µg/L total)	Chronic Freshwater Criteria (µg/L total)	CCF	Numeric Target (µg/L total)
San Jose Creek Reach 1	--	--	--	5	--	5
San Gabriel River Estuary	3.1	0.83	3.7	--	--	--

# Wet-weather Targets

Reach	Median Hardness (mg/L as CaCO <sub>3</sub> )	Copper		Lead		Zinc	
		ACF	Numeric Target (µg/L total)	ACF	Numeric Target (µg/L total)	ACF	Numeric Target (µg/L total)
<b>San Gabriel Reach 2</b>	175	--	--	0.71	<b>166</b>	--	--
<b>Coyote Creek</b>	105	0.96	<b>15</b>	0.78	<b>79</b>	0.98	<b>125</b>

# Source Assessment



## ■ Point Sources

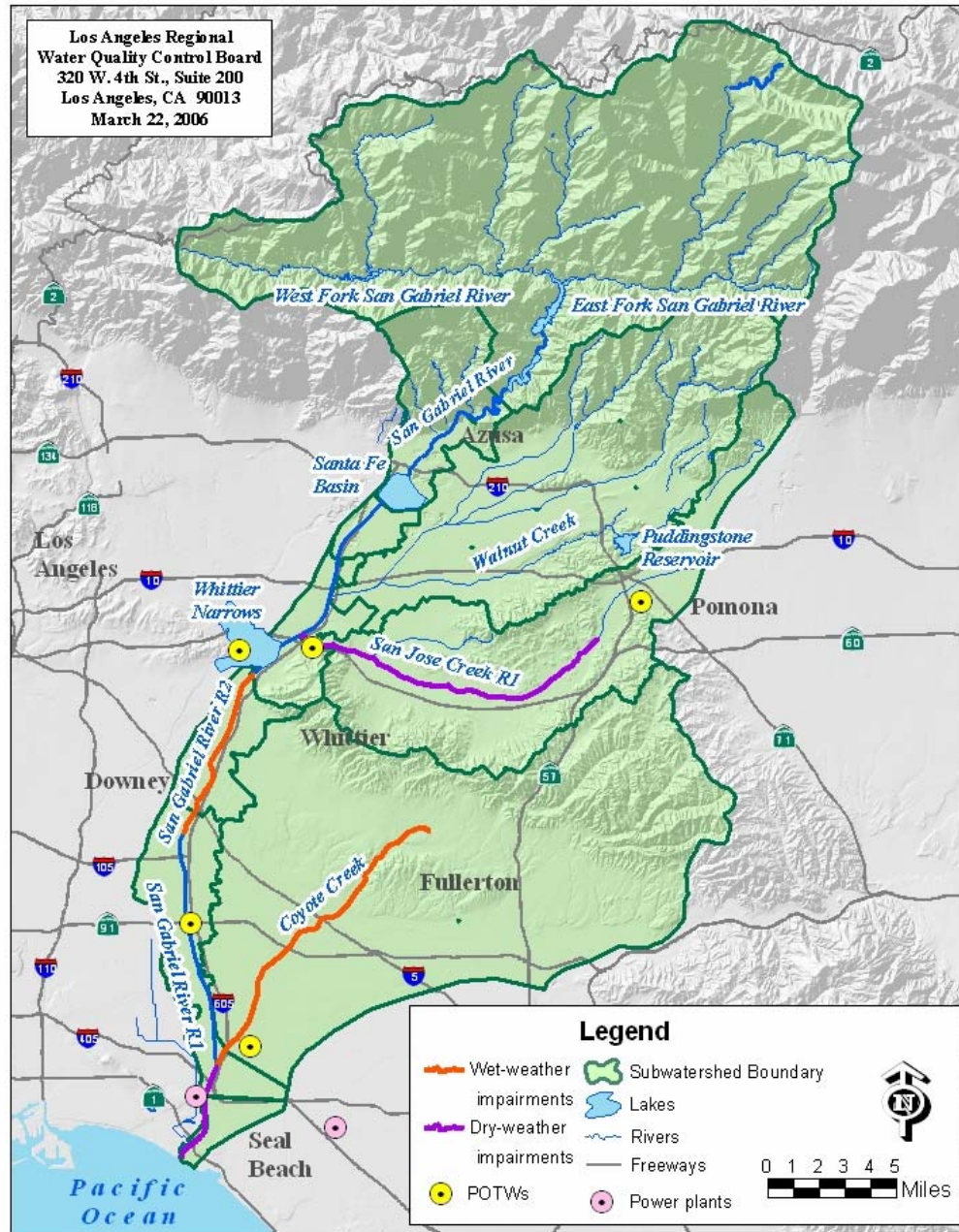
- 5 POTWs
- MS4 permits
- General industrial and construction stormwater permits
- Power plants (Estuary)
- Other non-storm water NPDES permits

## ■ Non-point Sources

- Direct air deposition
- Open space

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# San Jose Creek Selenium TMDL

- $TMDL = WLA_{SW} + LA_{Direct\ Air} + LA_{Open} + WLA_{non-SW}$
- $TMDL = target * non-POTW\ median\ flow\ (19\ cfs)$ 
  - Allocations to San Jose Creek Reach 1 and Reach 2
  - $WLA_{non-SW}$  (including POTWs) = dry-weather numeric target
  - $LA_{Direct\ Air} = 0$
  - $LA_{Open} = \% \text{ Area not served by storm drains} \times TMDL$
  - $WLA_{SW} = TMDL - LA_{Direct\ Air} - LA_{Open}$
- Special studies allowed to refine WLAs

# Estuary Copper TMDL

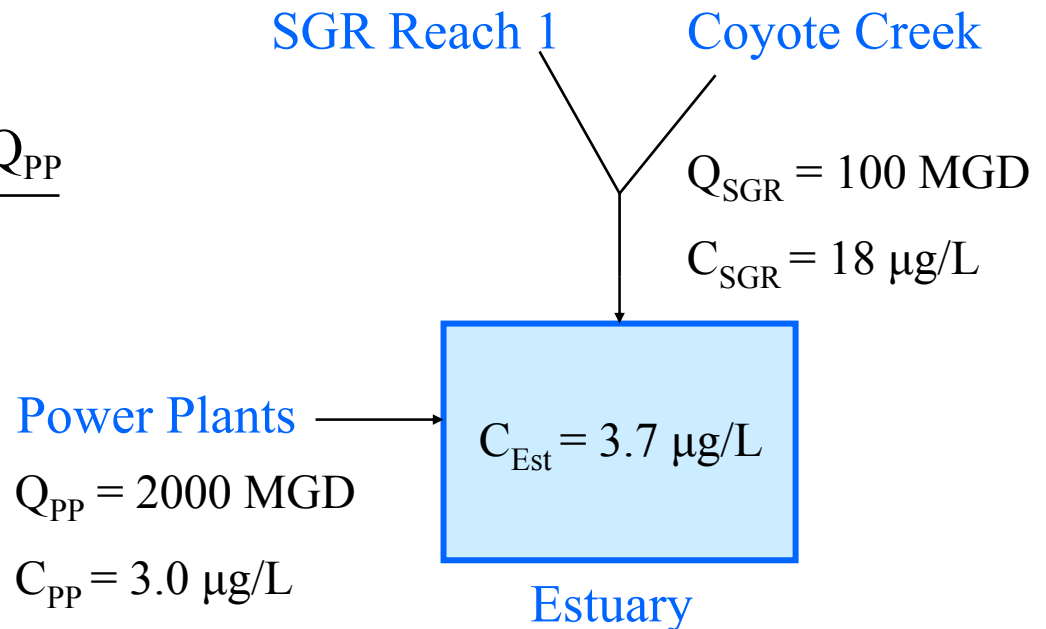
- TMDL = numeric target x Estuary volume at low tide (2.2 billion liters)
  - Allocations to Estuary (direct)
  - Allocations to San Gabriel Reach 1 and Coyote Creek (upstream)
- Sources receiving allocations:
  - Direct non-storm water point sources (e.g., power plants)
  - Upstream non-storm water point sources (e.g., POTWs)
  - Upstream storm water sources
  - Direct storm water sources
  - Upstream and direct nonpoint sources

# Estuary Copper TMDL

## Upstream and Direct Non-Storm Water Sources:

- Direct sources (e.g., power plants): saltwater-based WLAs
- Upstream sources (e.g., POTWs): freshwater-based WLAs

$$C_{\text{Est}} = \frac{C_{\text{SGR}} * Q_{\text{SGR}} + C_{\text{PP}} * Q_{\text{PP}}}{(Q_{\text{SGR}} + Q_{\text{PP}})}$$



# Estuary Copper TMDL

- Upstream storm water sources (freshwater-based):
  - $WLA_{\text{Upstream SW}} = 18 \mu\text{g/L} \times \text{non-POTW median flow (35 MGD)}$
- Upstream and direct nonpoint sources
  - $LA_{\text{Direct Air}}$  Based on previous studies
  - $LA_{\text{Open}} = \% \text{ Area not served by storm drains} \times \text{TMDL}$
- Direct storm water sources
  - $WLA_{\text{SW}} = \text{TMDL} - LA_{\text{Direct Air}} - LA_{\text{Open}} - WLA_{\text{Upstream SW}}$



# Dry-weather Allocations

Reach	Non-storm water WLA (µg/L)	Loading Capacity (kg/day)	Direct Air Deposition WLA (kg/day)	Open Space WLA (kg/day)	Combined Storm water WLA (kg/day)
San Jose Reach 1 and Reach 2	5	0.23	0	0.005	0.228
Estuary	3.0	8.2	$4.7 \times 10^{-5}$	0	5.9
San Gabriel Reach 1	18	--	$2.3 \times 10^{-4}$	0	1.5
Coyote Creek	18	--	$1.9 \times 10^{-3}$	0	0.84

# Wet-Weather TMDLs

Reach	Copper (kg/day)	Lead (kg/day)	Zinc (kg/day)
San Gabriel River Reach 2	--	Daily storm volume x 166 ug/L	--
Coyote Creek	Daily storm volume x 15 ug/L	Daily storm volume x 79 ug/L	Daily storm volume x 125 ug/L

■  $TMDL = LA_{Direct\ Air} + LA_{Open} + WLA_{SW} + WLA_{non-SW}$

■ Allocations to all upstream reaches

$WLA_{non-SW}$  = wet-weather numeric target

$LA_{Direct\ Air}$  = Based on previous studies

$LA_{Open}$  = % Area not served by storm drains x TMDL

$WLA_{SW} = TMDL - LA_{Direct\ Air} - LA_{Open}$

# Wet-Weather Allocations

Wet-weather allocations based on example daily flows (total recoverable):

Metal	Flow (cfs)	Daily Storm Volume (liters)	Loading Capacity (kg/day)	Open Space (kg/day)	Direct Air Deposition (kg/day)	Storm water permittees (kg/day)
<b>San Gabriel Reach 2 and upstream reaches and tributaries</b>						
Lead	260	6.4x10 <sup>8</sup> liters	106	50	0.41	52
<b>Coyote Creek and tributaries</b>						
Copper	156	3.8x10 <sup>8</sup> liters	5.7	0	0.012	5.7
Lead	156	3.8x10 <sup>8</sup> liters	30	0	0.07	30
Zinc	156	3.8x10 <sup>8</sup> liters	48.1	0	0.1	48

- Wet-weather monitoring required for Reach 1 and Estuary

# WLAs for POTWs (and Other Non-SW Point Sources)

POTW	R.W.	Dry WLA (µg/L)	Wet WLA (µg/L)
Pomona	SJC R2	Se=5	Pb=166
San Jose 001	SGR R1	Cu=18	--
San Jose 002	SJC R1	Se=5	Pb=166
San Jose 003	SGR R3	--	Pb=166
Whittier Narrows	SGR R3	--	Pb=166
Los Coyotes	SGR R1	Cu=18	--
Long Beach	Coyote	Cu=18	Cu=15 Pb=79 Zn=125

# Implementation for Non-Storm Water NPDES Permits



- WLAs translated into permit limits upon issuance, reissuance, or reopening
- Compliance schedules for individual permits

# Implementation for General Industrial SW Permits

- Dry-weather WLAs translated into permit limits upon issuance, reissuance, or reopening
- From permit issuance to 4 years
  - Interim Wet-weather WLAs serve as a goal
  - Monitoring to indicate need for upgrades
- 4-9 years
  - Interim wet-weather WLAs as enforceable permit conditions
- 9 years
  - Final wet-weather WLAs as enforceable permit conditions

# Implementation for General Construction SW Permits



- **6 years:** Construction Industry Studies assessing BMPs
- **7 years:** Regional Board to consider approval of Industry recommended BMPs
- **8 years:** General construction sites to implement Regional Board approved BMPs

# Implementation for MS4 and Caltrans



- Phased Implementation
- Structural and Nonstructural BMPs may be used to attain the WLAs
- Watershed may be divided into jurisdictional groups to facilitate coordinated monitoring and implementation



# Implementation for MS4 and Caltrans



- 15 Months, Coordinated Monitoring Plan
- 3 years Draft Implementation Plan
- 3 years Special Studies
- 3 1/2 years Final Implementation Plan
- 4 Years Board to re-consider TMDL

# MS4 and Caltrans Phased Reduction

## ■ 6 years

- 50% area meets dry-weather WLA,
- 25% area meets wet-weather WLA

## ■ 8 years

- 75% area meets dry-weather WLA

## ■ 10 years

- 100% area meets dry-weather WLA
- 50% area meets wet-weather WLA

## ■ 15 years

- 100% of area meets dry and wet-weather WLA

# Questions



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